1: Underhill E-5 (1931-1935)1946 NU28 Papago NU28

The wounded woman sings in delirium.

727 783 x539 26. A black bear came;
He touched me all over.
Above me he wrung out the morning
[Like a cloth].

She refers to her dress, which two Apaches stole and took away as a trophy down behind Baboquiviri.

27. Behind the distant range of Baboquiviri,
Where flowers grow,
They took me.

28. The women gossip about me
They gossip about me.
They do not know that this, my heart,
Within me is dizzy,
[As though] full of water.

727 783 ●[539] When two singers had sung two songs each, they were given by the master of ceremonies two roots to chew, according to the moieties to which the enemy slayers belonged. For the Coyote moiety they chewed "scented grass" (unidentified); for the Buzzard moiety, *Houttynia californica*. Their breath scented with the herb, they blew smoke over the enemy slayers. Then they called them by the kinship term, and each wished for the new "ripe man" the same luck in war, hunting, or gambling that he himself had had.

TO WARRIOR AT VICTORY DANCE(19)

727 783 x539 29. [Kin term].
Hail friend! You will be like me. Thus you will do.
You will never fear darkness or thirst or cold or hunger when you encounter them.

One speech was recorded as spoken by the guardian at this time as the last of his series of speeches.

ON SMOKING OVER THE ENEMY SLAYERS AFTER THE VICTORY DANCE[37]

30. Thus did I wreak ill on my enemy by many devices,
Did cause him, as he fought, to become like a ghost and to fall asleep:

[37] Compare the Pima speech, Russell, pp. 363-65.

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favorable to me. Give me life. Let me be a runner; a shaman; a singer; a hunter."

All those who had their prayer sticks threw them into the sea. If, for some reason, a man was not acceptable to the supernatural, the waves would return the prayer stick. The most usual reasons for rejection were failure in sexual continence during the preparations for the journey or the fact that a man's wife might be menstruating. However, "the sea cleans the sticks." If a man persevered and threw in his offering four times, it would be accepted.

Sometimes a man himself was taken by the sea and engulfed like the prayer sticks. Speech No. 8 speaks of such an experience. No one attempted to rescue the drowning man, for he was being summoned by the supernatural. He might reappear after many years as a powerful shaman, or he might be turned into a bird or a fish.

Any object which a man saw while in the sea was a special gift to him from the supernatural. If he noticed a strand of seaweed, a shell, or a pebble, he sprinkled corn meal on the object, then took it home as a token, very powerful in cleansing salt pilgrims. A kind of seaweed known as "ocean foam" was particularly desired. Sometimes a man took hold of something which, when he found it in his hand, lost its beauty, and in that case he must put it back exactly where he found it, again sprinkling corn meal (5).

After their entry into the sea, the neophytes ran on the beach: a strenuous test of their powers. There was a headland some twenty miles from the salt bed, according to informants, and the men ran to this and back, not stopping except on the headland itself. Some men are reported to have perished from cold and exhaustion during this run, but all trained for it during their whole boyhood, for it was here that a magic experience was expected.

Everything that a man saw while running was an omen for his future career. One informant saw a flock of white cranes, which seemed to him to be men running. He followed them and was able to keep pace, and from this he knew that he would be a great runner. One saw the white cranes playing with a kickball, and knew that he would excel in this sport. One, exhausted from running,

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plumes strung over the dance ground at the rainmaking ceremony. The husband of one informant could "spit on a stick, twist it, and wring out water."(26) Such a man was known as *sîiwanyi*, which means rain magician, rather than mere medicine man. It is the term applied to the rulers of the greathouses and also to the leader of the salt pilgrimage, who brings rain from the ocean.

War shamans were meeters of the owl in whose body the souls of the dead could become incarnated. Such a shaman accompanied a war party and spoke with the spirits of Papago warriors dead in the enemy country, who acted as spies on the Apache movements. Less often, he communicated with the peaceful dead at home. Miss Densmore [2] quotes some songs by an "owl woman" who held such communication in recent times. Other shamans acquired special powers for bringing luck in games and casting spells on the opponents. Before a kickball race, two who were so gifted rolled the ball back and forth between them, singing to insure power to their side. When the shirts, baskets, and hides wagered by the rival villages were piled up, each hoard was guarded by a shaman. During the wait before the race, these champions sometimes gave proof of their powers by swallowing swordlike sticks, eating fire, walking on hot embers, and causing objects to disappear. No harm came to the shaman who was worsted in the contest, but the poverty of his powers, thus revealed, took the strength from his village and made it almost certain to lose in the contest.

Shamans owned love magic. A "mushroom," which corresponds to the Huichol description of peyote, was a strong love charm. A man stalked it like a deer, and shot it with an arrow before it had time to disappear into the ground. He must then give it to a shaman for magic treatment before he could carry it as a love charm. One informant reported of a shaman: "He had four wives. By the time he took the fourth, he was a very old man, but as a shaman he could 'do something' to make her love him." Four, it may be mentioned, was the traditional number of the shaman's wives, while the average man rarely got beyond two. The standard taunt to one who could afford more was: "Well, have you become a shaman?"

[2] Densmore, pp. 114–34.

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753 776 of as a little old blind man with red-rimmed eyes. He passed people on the road, and the wind blowing from him to them caused trachoma and other eye troubles. A whole series of songs describes *pihuri's* personal habits. No fetish is used. The musical instrument is an especially stout scraping stick of cactus rib with very fine notches.

753 776 x 539 *Pihuri is a great gambler.*

30. Am I not *pihuri, pihuri, pihuri!*
Lo, the playing cards painted;
I like them!
They are like a magnet [to draw winnings].

Pihuri is so old that he even pounds up fresh deer meat before cooking, so that he can chew it.

31. Lo, it is Badger shaman!
At night he runs.
Deer meat he brings.
Lo, it is *pihuri,* the little old man!
The meat he is pounding.(20)

Pihuri has a good metate, which all the girls like to use. Now pihuri has a protégé sleeping in the house, and the girls are afraid of him, so grinding is heard in all the other houses, except pihuri's.

32. Lo, I am *pihuri's* little familiar.
I lie in the house.
That is what you [girls] are afraid of.
Are you afraid of me
Around me in all [the houses]
There is the sound of grinding.
In all [the houses]
There is the sound of grinding.(20)

776 824 [171] Some informants thought that *pihuri* was a plant which took human form. It is supposed to be an intoxicant, and there is some mysterious connection between it and the deer. The Pima are said to consider it a tree growing in Mexico.[9] These scraps of information suggest a connection between *pihuri* and the Huichol *hikuli,* peyote. It is possible that they represent a few vague rumors as

[9] Russell, p. 79. Russell also speaks of "Piholt" as an evil spirit (p. 265).

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to the Mexican plant. Two songs illustrate this aspect of *pihuri*, though they are used for curing sore eyes, just as are the others.

33. The deer is drunk;
The deer is drunk.
Around the great mountain he runs.(20)

34. There is the sotol blossom fallen down;
Toward it I run.
It fell on the leaves of the *pihuri*,
And I run toward it.
It will make us drunk.
In a circle we shall go singing.

There is the sotol blossom fallen down;
Toward it I run.
It fell on the leaves of the *pihuri*,
And I run toward it.
It will make us dizzy.
In a row we shall go singing.(20)

Two other plants take human form and cause hallucinations. One is *Datura meteloides* (jimson weed). The song for it is:

35. Here you brought me to the liquor.
It was very good.
I was very drunk.
Hither you brought me,
And an eagledown headdress you made me.(20)

The other plant is the unidentified *tcĭnacat*,[19] which has here been called lizard weed. For this no song was obtained.

It is possible for sickness to come from almost any phenomenon in nature, depending, perhaps, on the imagination of the shaman. Such illnesses are rare, and the only one mentioned was from the whirlwind. *Symptom:* dizziness. *Musical instrument:* basket and scraping stick.

56. A little gray whirlwind
Is trying to catch me.
Across my path
It keeps whirling.

[19] See the Pima song (Russell, p. 229), where the word is spelled *TCU-Unarsat*.

2: Underhill E-5 (1931-1935)1939 NU28 Papago NU28

616 blew tobacco smoke over him. These smokers held in their mouths a different herb according to the moiety of the man to be purified: a [524] sweet grass for the Coyote moiety and *yerba mansa* for the Buzzard. At the corn dance, which is now only a tradition, Coyote people painted their bodies with white splashes, Buzzard people with red.

Moiety influenced a man's choice of guardian spirit and his dreaming of songs. A Coyote man would be very likely to dream of Coyote, though other animals would be possible. He would never dream of Buzzard, who helps his own "partners".

The Coyote moiety is numerically in the majority as may be noticed in the list of informants. In fact it was difficult to find enough Buzzards to be sure their side of the story would be heard. In songs and chants the expression "our partner" is taken to refer to Coyote without further description, while Buzzard rarely appears.

However, every one is still aware of his moiety (with the exception [522] of one clan to be mentioned below). People use the knowledge principally to taunt one another in joke. This may be done privately but is also much in use at festivals, where it seems to be semi-ceremonial.

"Two women, a Buzzard and a Coyote, came to a pond where a coyote had been drinking. 'Oh, how bad it smells!' said the Buzzard woman. 'That is your partner.' 'Your's smells worse,' said the Coyote woman." (22)

"The Buzzard people, seeing a buzzard in the air, will say: 'Our partner is always dancing.' Coyotes reply: 'He has to stay up there. He smells bad.'" (22)

"'Your partner steals,' say the Buzzards. 'Well, yours eats dead things' the Coyotes reply." (22)

A Coyote man would never kill a coyote. If the animal pilfered [524] from his garden, he would simply submit. "We can't chase away our partner." In killing a deer he would leave the entrails and perhaps a piece of meat hanging on a tree, saying: "Here, partner. This is your share." A village called "Coyote Lives There" once contained a tame coyote, which informants think must have been kept by a member of the Coyote moiety. "It would not stay for a Buzzard." There are fewer stories about the treatment of Buzzard, whose cult seems to have lapsed.

Sibs

614 Five patrilineal sibs are known, with a legendary sixth and seventh. They are:

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with maguey cord so that they were about three inches apart. A short length of maguey cord with heavy knots at both ends was also used. The stick was made of catclaw (Acacia greggii) cut to the height of the player and with the end bent at the angle of a ladle.

The playing ground was a cleared space about "one hundred steps" long. If there were no trees at either end to mark it, sticks of cactus rib would be set up. The players all gathered in the middle and threw up the ball. It was picked up and thrown with the sticks, the aim being to carry it past the opponents' goal. The myths tell of women travelling from village to village to play this game, so enthusiastically that they left their babies uncared for. Spanish missionary nuns, as late as two generations ago, confiscated the sticks and burned them in order to get the womens' attention for household tasks.

The children's games can be played without betting though small wagers are not uncommon.

The ring and pin game is played with a stick of hard wood to which is attached a buckskin thong or a string of yucca fibre about eighteen inches long. The cord is strung with five rings made by slicing through a small squash when it is fresh. The pulp dries out and the circular strips of rind shrink until they resemble flat leather rings, from four to two inches in diameter and with an opening at least an inch across. The largest is placed nearest the tip of the stick and the smallest at the end, where it is kept from falling off by a solid tab of squash rind. The game is to swing the cord and then impale as many rings as possible on the stick.

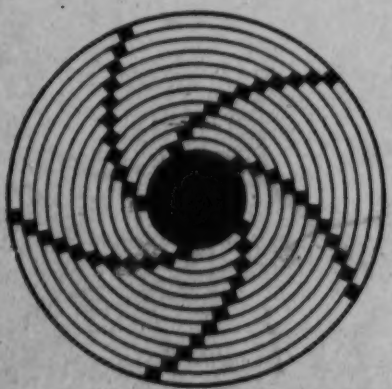

Fig. 8.

Papago Basket Designs used for Game Scoring.

2: Underhill E-5 (1931-1935)1939 NU28 Papago NU28

836 this way of life but simply gave up and allowed her to have her way. If she had children, they would take care of them, since no stigma attached to a fatherless child. The only penalty was that they could not find her a husband, because she was not industrious. But when she was ready to settle down, she frequently found one for herself.

The mother of one informant is reported to have been such a woman. She had wandered to the Altar valley, where she met the young chief (American appointed) of a desert village. "Will you take me to your home?" she proposed. "Would you pick cactus fruit for me, grind my corn and fetch my water?" "Yes. I will pick cactus, grind corn and fetch water." She settled down and spent her life as an industrious wife.

Such incidents were not infrequent. In taking family histories, I several times heard the statement, "He married a light woman", without any other comment than a smile. "The light woman can't help it," informants explain. "Her heart bubbles over" (20). "When you talk to her, she doesn't know what you say. Her heart is outside her, running ahead, to the next dance" (31). Some of the most poetic of Papago songs deal with "the wandering heart" of the light woman.

836 832 753 787 Men who were flirtatious and had many sex affairs were also alluded to as playful but they did not form a distinct class like the women. Both men and women might be made ill by dreaming about the playful people. The symptoms were dizziness and lassitude. The cure was to make clay dolls in the form of man and woman and to have someone sing the girl's puberty songs. Lovesick visions were a common ailment and were attributed to several causes. An [824] unidentified root, called tcinaca't,[1] was used by men to attract both deer and girls. This root could assume the form of a man, enter a woman's house and cohabit with her after which she would [778] pine. Also the scalps or the Apache effigy in an Enemy Slayer's basket could take the form of a handsome man, and torment women with yearning.

831 825 If anyone, man or woman, thought too much of a person of the opposite sex, even though that person were a spouse, a snake would come and cohabit with the dreamer in the place of the loved one. Many tales are told of people who supposed themselves happily married, while others knew that they were going daily to the arroyo to lie with a snake. The same fate will overtake one who is not yet married and who thinks too much about love. Young people who look dreamy are reprimanded: "What are you mooning about? You must be married to a snake."

[1] cf. Zuni tenatsali.

3: Underhill E-5 (1931-1935) 1936
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The third brother was called Shining Evening and he was a man-woman. His parents suspected it when he was very young because he never wanted to play with boys, always with girls. So they thought they would test him. They built a little enclosure and in it they put a bow and arrow and some basketry materials. They told the boy to go in there and play, and when he was busy they set fire to the enclosure. They thought they would see which things he saved. Out he came, carrying the basketry materials. They tried the same thing again and again after that, and it was always the same. The man-woman was very pleasant, always laughing and talking, and a good worker. She was so strong! She did not get tired grinding corn as I did, so sometimes she did it for me. That was something my husband could never do even though he was kind. It would look too bad for a man to grind corn. I found the man-woman very convenient.

I lived happily with those people and of course we never quarreled. Why should we do that? And strangely, soon after I had been married, I became dangerous again, for the first time since I had been danced. We told the medicine man and he thought, perhaps, I should be danced again and my husband, too. Who knows what danger there had been without our knowing it. So they danced us.

But this time it was different. I did not have to work hard because I had been through all that. I did not even have to sleep in the Little House. I slept in the big house next to my mother-in-law. My husband slept on the other side of the house. Every night we danced, Ah, we danced, we danced. All my life I had wanted to do that. In the daytime I could sleep. Sometimes I slept all day and waked in what we call the red evening to hear the rattle outside the house. Have you heard the rattle when our people come up in the night to dance? Ah, good!

The old people watched me until it was over, and then my husband and I ate the white clay together, and we could touch our heads and have salt in our food and go on as before.

One day my father-in-law said: "Should not our daughter-in-law be tattooed? Her face does not look right, all light, with no black on it." So my mother-in-law tattooed these four marks I have on my chin. I lay on the floor with my head in her lap and she pricked the lines with cactus thorns. Then she rubbed in greasewood soot. It hurts frightfully but if you keep still, the marks come out narrow and clear. If you wiggle they are all blurred. I did not wiggle, but I have seen girls whose chins just look as though black juice had run down them. Mine came out very pretty and, for four days, while they healed, I ate only cactus joints to make them blue.

That fall our people were going over to race with the River People

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That coyote rose up and said: "Do you want to see something?" "Yes." My husband died right there and the coyote carried him away.

The other men wanted to go home and they said: "Where is he?" But the leader knew about these things. "He must have Met something. Let him alone."

Next morning my husband awoke and found himself lying by that dead coyote. He went back to the others but he never told them what he had seen.

Only after that he used to go out at night and Meet the coyotes. He would leave early in the evening and come back looking sick or drunk. The coyotes had killed him and taught him while he was dead. He did not tell us this in the house, but we all understood. The same thing was happening to his two brothers and had happened to his father before him. It was coyote who Met them all.

After a while the people began to know that he had something. They would ask him to come and find their sicknesses for them, because people have great faith in a young medicine man. They think he has more power than an old one; he has not used it up. My husband had got himself a gourd rattle and some eagle feathers. We get our gourds down in Mexico where they grow them large and beautiful. He glued a handle on one with some mesquite gum and put some pebbles inside; nice little pebbles that you find in the wash among the ants. He got eagle feathers from an old man and tied them on a handle, four of them, tied two and two, beautifully wound about with string. He went to the houses and sat all night, rattling the gourd and singing, and they gave him clothes and food. We got rich.

Six children I had by my husband, for he was a strong man. I never had any trouble in childbirth. And I could tell what sex they would be before they were born. If the movement in my womb were strong, it would be a boy. I had five boys. I was unlucky with them, though. As soon as a new one came, the one before it died. I know a great deal about children, now that I am old, and I think it was the milk. We nurse our children till long after they can walk and talk. We must. We have no cow's milk. What would they eat? But my husband was such a strong man. The children came so fast. I was always nursing one while another was coming, and then the nursing one died.

Perhaps, though, it was only diseases that came by bad luck. That is what my husband said. He treated our children; they were among the first he sang for. One had jackrabbit sickness, which is a sort of coughing and choking that comes to a child so it cannot breathe. Another had dog sickness. I suppose a dog must have breathed on me with its hot breath before the

5: Castetter & Bell N-5 (1938-1940 1942
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CHAPTER VI

AGRICULTURAL IMPLEMENTS

Pi Pa 241 Piman agricultural tools were few and simple, and fortunately it is still possible to find informants who carried on agriculture entirely with these primitive implements in their early manhood, thus it has not been difficult to secure accurate descriptions.

Pi Pa [224] The most important of these aboriginal tools was the digging or planting stick. It was preferably of the heartwood of ironwood *(Olneya tesota)*, but might be of mesquite, screwbean or southwestern jujube *(Zizyphus lycioides)*, depending somewhat upon what hardwoods were readily available. The aboriginal type usually was made from the branch of a large tree, but might be from a shrub. The bark was first peeled off, then at the digging end all the sapwood was removed on two sides to produce the chisel-like edge, while at the handle only sufficient of the sapwood was removed to make it convenient for grasping with the hand. The finished tool was about four feet long depending somewhat upon the height of the man who used it. It tapered slightly from the handle, about one and one-half inches in diameter, to about two and one-half inches at the digging end which was sharpened to a somewhat flared wedge or chisel-like edge, with slightly rounded corners; these soon became more rounded by use (fig. 1a). It was thus fashioned by rubbing with a rough stone, and the edge was never fire-shaped or fire-hardened since the wood selected was itself very hard. There was no foot rest on their planting sticks, nor did these tribes ever have one forked like a crutch.

This implement is very similar, except in length, to those found by Hough[1] in Tularosa Cave, on the Tularosa River,

[1] Hough, *Culture of the Ancient Pueblos of the Upper Gila River Region*, pp. 62-3.

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
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Neither did these people anciently rotate crops to conserve soil fertility. Today, however, it is known that crops such as small grains and sorghums soon deplete the land and result in reduced yields if grown on the same soil repeatedly, so for a number of decades the Pimans have planted crops of maize, beans, pumpkins, melons etc. on ground from which the wheat was harvested in May or June.

Pi Pa 242

Cultivation

Four being the Piman ritual number, it was supposed to take maize four days to germinate and all informants insisted maize, teparies, pumpkins, watermelons and black-eyed beans were up in four days, that pink beans and lentils required five to six, wheat ten days. If the surface of the ground caked, seedlings other than maize with its pointed shoot had some difficulty in breaking through, and in such cases they were usually assisted by removing or pulverizing the clumps of soil around them. One Papago informant said that in farming *everything had to be taken care of*, even to the extent of aiding plants to break through the ground if necessary. Another stated it was not the purpose of the Papago to let plants grow by themselves but that all cultivated plants have to be taken care of and be helped by human hands, and one can not take things for granted. Informants advised that there was no ritual for cultivation since there was nothing could be done in a field to secure good crops except cultivate, and that if this were not done, poor crops would result. Another perspective on Papago industry and outlook was given by Chico Bailey, who, upon being asked whether the Papago ever abandoned fields because of erosion, said the proper thing for the farmer in a dry-farming area to do is stay on his land, work it and not abandon it; that there was nothing to be gained by moving elsewhere.

Pi Pa 241 824

The soil was worked customarily at planting time and again when crops were cultivated, also a third time if condi-

Pi Pa 241

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Pa 251 415 285 Pima nest-shaped granaries were not used by the Papago. The very few storage baskets made by them were shaped like a hive, or a barrel, with incurving top, therefore of smaller diameter at the neck, and were about four feet in diameter and three high. The sides were usually crude coiling of twisted grass sewed together with mesquite bark, since arrow-weed is rarely to be found in their territory. These granaries usually were not placed on tops of buildings, but outdoors on stones or boards. Since, unlike the Pima granary, they had no roof, the opening was covered with an old flat basket or a broken olla. Being constantly exposed to the weather, Papago storage bins lasted only about two years.

However, Papago preferred to hide their food, and the usual expedient was to use jars rather than baskets. The most common jar was an old olla which had lost its porosity and no longer kept water cool. But special jars for storage purposes were made, as well as traded. The lid consisted of a piece of broken olla weighted with dirt or a stone.

Formerly the Papago also made temporary enclosures of sotol mats to store their grain.

A patriarchal Papago family stored its crops in several different places. A large supply was kept in the storehouse close to the village, while a few granary baskets might rest on stones near the dwelling, or, rarely, on the roof. A supplementary storage place was located in the flats not far from the base of the mountains, within easy reach of the winter camp. This was often a pit, deep enough to hold jars and baskets, and covered with brush or dirt. Here the baskets Pa [324] were protected with branches of the very spiny cholla, *Opuntia Bigelovii*. During their winter travels, the family sent a man back to the storehouse now and then to get food, but they tried to leave the supply at the village untouched until spring, the period of food scarcity, and it was not drawn upon until absolutely necessary.

Pi Pa 251 415 285 A second type of Pima storage container was of coarse coil, used to store maize, beans, wheat, wild seeds etc., and

5: Castetter & Bell N-5 (1938-1940) 1942
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was more carefully constructed than the arrowweed bin. The largest of these were globular in form among both peoples and might be as much as six feet tall and almost as wide. The smaller ones were rather bell-shaped among the Pima, and more or less barrel-shaped with the Papago. They were covered with a lid (usually the bottom of an old basket) and sealed with mud.[6]

After the introduction of wheat, the Pima made such baskets of a foundation of wheat straw bound together with strips of willow bark *(Salix nigra)*, mesquite or catclaw *(Acacia Greggii)*. Papago foundation elements were beargrass *(Nolina)*, ocotillo or wheat straw, the binding material of yucca or mesquite bark. This is the type of basket which Bartlett[7] observed among the Pima, and described as large vase-like baskets made of wheat straw ropes as thick as a man's arm, coiled into graceful forms and sewed together. He asserted that these held from ten to fifteen bushels and were filled with wheat and shelled corn. We have been unable to satisfy ourselves that this type of storage basket, figured and described by Russell[8] and Kissell,[9] is aboriginal. These were kept in a small storage house, never on roofs nor outdoors on platforms. This house is comparatively modern and of the same type as that described by Bartlett[10] in 1852. It was eight or nine feet high, rectangular in outline, with walls made of stakes of ocotillo or sahuaro ribs set close together, and provided with a dirt-covered roof. Although customarily left open for free circulation of air, at times they were covered with a layer of mud.

At present neither Pima nor Papago shell their corn to any great extent before storing. Much of it is simply thrown on top of an ocotillo *ramada* and dried without husking, then shelled as needed.

[6] Kissell, *op. cit.*, pp. 179-85.
[7] Bartlett, *Narrative*, II, 234-36.
[8] Russell, *op. cit.*, pp. 88, 145-48.
[9] Kissell, *loc. cit.*
[10] Bartlett, *loc. cit.*

5: Castetter & Bell N-5 (1938-1940 1942
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Dyeing

Pi Pa 386 224 Cotton was dyed buff by dipping in a dark buff ocher high in ferric oxide, but this was used only for the selvage thread. Cotton fiber dipped into a decoction made from the roots of curly dock *(Rumex crispus)*, an introduced species, as well as other species of this genus, took on a yellow color, and these roots were said to yield a darker color when the plant was in flower. Informants said roots of the native *cañaigre (Rumex hymenosepalus)*, from which all dirt had been removed, were crushed, then boiled to yield a yellowish dye solution for cotton. Fresh mesquite gum was boiled with this dye to make it fast.

Gourds

Time and Method of Harvest and Storage

Pi Pa [462] 249 Pima and Papago made a single planting of gourds. Ordinarily it was man's task to plant, but woman's to cultivate, carry water for them if necessary and harvest gourds when ripe, although men might assist in any of these stages. This single planting was made by both peoples—by the Pima in late March or early April, the Papago in July. A little more than three months was required for them to ripen.

Gourds were all gathered at once rather than progressively, and this while the plants were still green. Women gathered and carried them to the dwelling in a burden basket or cloth, cutting each one off the vine with a sharp stone. Care had to be exercised in handling them until dried lest they become bruised. When harvested, they were laid away to dry throughly before being prepared for use, usually being placed in a pile and covered with weeds or grass. They were selected by shape according to the purpose for which they were to be utilized.

There was no selection of seed from specific shapes of gourd to propagate particular types, although formerly it was customary to bind a piece of bark or cloth around them while growing in order to secure certain shapes.

5: Castetter & Bell N-5 (1938-1940 1942
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Pima NU29

Also, if one should see a person planting, and knew he was planting tobacco seed, it would not come up. If a man who had ill thoughts came near the tobacco it might not come up, or if it did would not be any good.

The Pima practice differed somewhat. They, too, grew tobacco in an isolated portion of a field where no one else would see it, and for the same reason, but a man could never do the planting by himself. He must always have one or more old men accompany and help him, or at least watch him plant it. The men who assisted were paid in tobacco which the grower had previously raised. The same man did not plant tobacco every year, since he raised enough in one year for two or more years' supply. Several old men worked together to harvest the crop just as they did in planting it.

Papago and Pima tobacco had to be planted by older men who knew how to "talk" to it when planting, since it was regarded as a person, saying about as follows: "Now I place you here; may you come up well, grow strong and ripen so that my friends will come here and use you," or "I am a tobacco man and I plant you." The Papago planter then sang the tobacco planting song four times and finally placed the seed in the ground. Each time he came back to see the plants, at required intervals of four days, he sang the same song to the tobacco four times, believing that this gave it more strength (four is the ritual number among both the Papago and the Pima). After the eighth obligatory visit, he need no longer sing the song unless he wished to do so.

Piman women were not allowed to see tobacco growing, and if a menstruating woman were to see the plants they would shrivel up. In planting, tobacco seed must not be called by its real name, else it would not come up, and plants should not be watched too much while growing lest they be dwarfed. All ritualistic aspects of tobacco cultivation were regarded fully as necessary as the practical ones in producing a crop.

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU2?
Pima NU29

Smoking

Pima usually carried tobacco in a special buckskin or foxskin pouch, decorated with sun symbols in bright colors and rattles, sometimes fringed, and closed with a flap folding over the top or occasionally with a drawstring. The simplest Papago pouches were a circular piece of dressed buckskin with a fringe around the entire edge, and tied up with a thong. Others were made of rabbit, or sometimes fox, skin with the fur left on. All present-day Papago pouches are of buckskin, dyed red with the root of *Krameria glandulosa*. They are made of two semi-circular pieces sewed together with fringe around the seam and a flap fastened by a knot or thong serving as a button.[4]

Papago and Pima had no true pipes, a fact mentioned by Lloyd[5] in 1911. Cigarettes for smoking tobacco were made usually from tubular stem sections of pigweed, or *bledo (Amaranthus Palmeri)*. These were from one-fourth to nearly an inch across, and six to eight inches long, cut when the plants were mature, dried and the pith bored out. After coating with a layer of gummy secretion from the mesquite tree, they were ready for use. A Papago informant said the *Amaranthus* stems were being used for smoking when he was a boy, but that reed grass *(Phragmites communis)* stems had been utilized at an earlier time and had fallen into disuse due to scarcity and consequent difficulty in finding them. This reed grass does not occur in southern Arizona (except along the Colorado), but is found along streams in Apache, Navaho and Coconino counties.[6] Russell[7] states that it was formerly common along the Gila. Rolled cigarettes, made by wrapping tobacco in inner corn husks, seem to have been a later development among both peoples. Any special gathering for the good of the tribe or ceremonial occasion demanded

[4] Castetter and Underhill, *Ethnobiology of the Papago Indians*, p. 50.
[5] Lloyd, *Au-au-tam Indian Nights*, p. 89.
[6] J. J. Thornber, Personal correspondence, Feb. 13, 1940.
[7] Russell, *op. cit.*, p. 134.

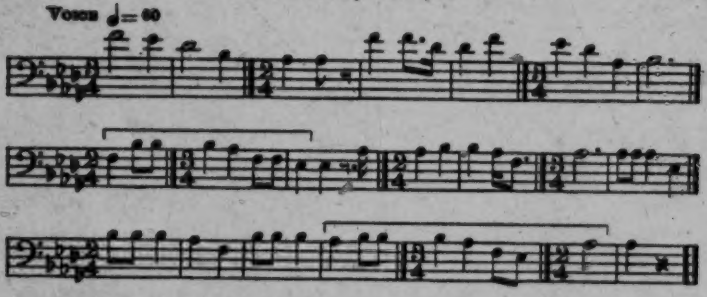
6: Densmore E-5 (1920) 1929NU28 Papago NU28

X 533

No. 159. "I Sat Under Santa Rita Mountains"

(Catalogue No. 1061)

Recorded by VICTORIA



TRANSLATION

I was under Santa Rita Mountains.
I sat there and thought of things far away, in distant parts of the world.

Analysis.—A varied rhythm characterizes this song. The opening phrase contains only descending intervals and is three measures in length. The second phrase begins on the same high tone and is seven measures long. This is followed by a phrase of three measures, after which the rhythm is maintained without a pause to the end of the song. As in many dream songs, the final interval is an ascending fourth. The song has a compass of nine tones and is based on the fourth five-toned scale.

HUNTING SONGS

224 824 X533 The singing of a song and smoking of an herb to attract game is a Papago custom and was noted also in the study of Chippewa and Menominee songs. Three plant substances thus used by the Chippewa are the roots of the *Arctostaphylos uva-ursi*, *Aster novæ angliæ* L., and *Aster puniceus* L., while the Papago use *pihol* flowers, mixed with tobacco. This is indicated in the words of a song recorded by Jose Manuel and not transcribed: "The morning is breaking. I have my bows and arrows ready. I run to a little hill. On top of it I sat down. I shot at him and wounded him. I used a little *pihol* flower which made it easy for me to catch the wounded deer."

X 533 843 224 The song next following was sung to insure success on the hunt and also to cure the illness of a child whose father had disobeyed certain rules before its birth. The father of an unborn child was restricted in conduct when on the war path and also when hunting. If he saw the motions of the deer when it was dying, or cut certain parts of the deer when preparing the meat, his child, when about 2 years old, would make the sounds and motions of a dying deer.

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

cave, and he had made several improvements in the ar- 778
rangement of some. As the time drew near for our ex- 782
cursion, I felt little inclined for the vigil of one night which had been agreed to, so I asked him if a couple of hours' devotional exercise might not be sufficient for our needs. Clemente and Guadalupe, though perfectly willing to comply with the conditions, confessed that they did not know any Pinacate songs. By this and similar arguments we succeeded in changing the old man's mind, and he delighted me when after thoughtful reflection he declared that it was not necessary to sing now that we had so many sacrificial things.

I had decided to take Monday, January 3, for the visit, 778
combining with it an ascent of the one of the two peaks which was nearer to our camp. In the morning the wind changed to west and north-west; a chilly, light shower of rain fell, but when we started from the tinajas for the ascent at 10.40, the weather was clear, there being only a few nimbus clouds in sight. As we followed the fairly distinct Indian trail that winds its way along the ridges upward, I observed the chuparosa (*beloperone californica*), [262] [824] ●
the flowers of which are eaten by the Papago, and also quantities of the well-known plant chia in the small arroyos and declivities. One hour's march brought us to the base of the cinder-covered cone where the cave was situated. Many years had gone by from the time of Queléle's last visit to the sacred precinct; his hair was not gray then and more than one generation had passed since. He could not at once find the object of our trip and half an hour was spent in searching for it in the lava flow.

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

302 The men frequently have slight moustaches. At [142] present the men all have their hair cut short, but a lux- [832] uriant growth was formerly considered a standard of beauty. It was occasionally washed with an infusion [824] from the roots of a vine called *ádofi*. Sometimes these [751] natives would plaster the head with clay, to kill parasites and ensure a better growth of hair. The women still take great care of this ornament to their persons and are often seen brushing it with brushes made from the roots of sacaton grass. With the children, it is cut so that it may grow strong, and the cut hair is twisted into a cord which is used in tying together parts of the burden basket as well as in the tying of the saddle-bag. Formerly the custom was to leave the children's hair long on top of the head, back of the neck, and in front [149] of each ear. I saw a left-handed man and a left-handed woman in the tribe. If it be permissible to draw any [513] general conclusions from the sound sleep of my companion, Pablo, these natives sleep unusually soundly. One morning, while he was with me, he woke up several yards below his bedding, having rolled down a declivity [264] during the night in his sleep. The Papago avoid eating food hot from the fire.

157 They possess much force and stability of character, are quick of perception, loyal to the white man that they like, and if in danger do not cry for help. Under her natural bashfulness the woman hides sterling qualities of efficiency in household work, constancy, and faithful adherence to duty. These Indians are industrious and have a remarkably even temper; thirty children

7: Lumholtz N-5 (1909-1910)1912
NU28 Papago NU28

may be seen playing harmoniously together, where a similar gathering of small Caucasians would soon result in discord, fights, and tears. The children and young girls have three kinds of chewing gum; the one which is most commonly used has been mentioned already, another is procured from the pod of a vine which comes early and dries in July; by squeezing the pod a milk is secured which when boiled yields a gummy substance. These natives never shake hands; they come and go and are never obtrusive. In the circumstances under which I travelled, I liked that custom; it made me feel independent and equally polite. When an Indian comes to shake hands with me, I know he has changed his mode of life, for one may be sure that he learned that custom from Americans or Mexicans. Their language is not sonorous, as it is full of guttural sounds and half-pronounced syllables. Four is their sacred number.

In the autumn of 1909 there was a mild epidemic of an eye disease among the Papagoes of Sonora as far west as La Nariz. The eyes were red and inflamed, as in conjunctivitis, and the pain evidently was very great. They probably contracted this disease from the Mexicans.

In his changed habits of life, inhabiting houses that do not admit air and adopting clothes that debilitate his magnificent physique, the Papago, when he catches cold, is unable to throw it off in the same way that a white man does. It very often develops into pneumonia and consumption, which awful disease is the scourge of the tribe, nine out of ten deaths being due to tuberculosis. The children bring it from school and even old people

9: O'Neale & Dolores E. 1-4 (no date) 1943
NU28 Papago NU28

ipakı color (corresponds to our purple-red). *cahsipaima'*KI, almost *ipakı* color; *ipaima'*KI, *ipakı* color; *sihsipaima'*KI, very much *ipakı* color. *ipakı* is the name of the prickly pear plant, as well as of its fruit. *mak* is the verb to give. The combination means to give the color of the fruit to something. *ipakı* is similar to dark cerise or crimson.

The juice of the *ipakı* fruit, which appears somewhat lighter when dry, is one of the most easily obtained paints for coloring the feathers on arrows. In addition to its availability, the juice can be used just as found.

Color designations of Spanish origin used by the Papago.— The group of color terms in this section are generally applied to the animals which were brought in by the Conquerors. Determining clear meanings for these adopted words has not been a simple matter, nor can the authors be certain that they always have had the same ideas in mind. Comparable difficulties are encountered in attempts to differentiate the characteristic appearance of surfaces to which the English words flecked, pied, mottled, splotched, or dappled are applicable.

Some of the Papago-Spanish equivalents are obvious.[4] It is essential to recognize that *l* and *r* are frequently confused, and that *b* and *v* are interchangeable, especially in phonetic spellings.

The following compilation of terms includes those in common usage among the Papago:

alihcani, sorrel. (Sp., *alazan*, sorrel-colored.) Applied to horses.

kanilok, roan. (Sp., *aconelado*, cinnamon-colored. If the unaccented initial vowel and the intervocalic *d* are dropped, the equivalence seems clear.) Applied to horses.

liksintok. (Sp., *retintado* (?), retinted.) If two colors are evident, but one of them has the appearance of having been painted over the other, the effect is called *liksintok*. Applied to horses. When the color spots have more distinct outlines, the designation *pintok* describes the effect.

pintok. (Sp., *pintado*, painted, spotted, mottled.) To the Papago, this word means two colors, but it is necessary to mention which two, since no indication is contained in the word itself.

savinok. (Sp., *sabino*, a mixed white and chestnut color. Applied to horses and mules.) The Papago apply this term to a dappled buckskin horse.

su'helahtok, one of the browns. (Sp., *chocolate*.) Applied to dogs.

saliksah. (Sp., *barcino* (?), ruddy, approaching redness. A word regularly applied to cows, bulls, dogs, etc.) As the Papago apply this word to cows it does not mean a single color, but a mixture of colors which produces a spotty effect. *saliksah* is always used in combination with some color name indicating that that color predominates, or is most noticeable. *saliksah* is similar to our mottled, a word which in itself only describes an appearance, and one which requires a phrase "with green," "with

[4] The authors are indebted to Professor Beatrice Cornish of the Spanish Department, University of California, for helpful suggestions and aid in checking possible Spanish equivalents for Papago color terms.

10:Dolores I-5 (1911-1919) 1923
NU28 Papago NU28

BOTANICAL TERMS

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824

a·n, desert willow
i·sevi'k, species of cactus
ihu, gathered cactus fruit
ihu'k, devil's claw, *martynia*
iva'ki, weeds, greens
ibahi, ibai, leaf cactus, *tuna*
i·hkovi, a food plant
i·hkuli, a medicinal plant (*peyote?*)
ohpon, a food plant
u·mu'k, species of yucca
us, stick, tree
u'u'se-bavi, *alimana* (tree bean)
uhtko, stalk of soapweed
uhtko-tce·tci, soapweed
u'ṭeva'k, *tule*
mi·ranyu, MILIN, muskmelon
mu·noi, beans
*muḍata'k, corntassel
nahw, nauv, leaf cactus
na·ka'k, species of cactus
lantcehki, lentil, *lenteja*
ca'i, underbrush, rubbish
ca·ṭ, wild potato
cekoi, greasewood
*cu'uvahṭx, *chia*
ha·li, ha·r, squash, pumpkin
hacani, giant cactus, *sahuaro*
haha'k, leaves
ha't, a food plant
hecsi'k, flower
ho'i, thorn
*ho'itx-kam, *palo fierro*
hovi'tci, Spanish bayonet
hunNI, corn
hulikata'k, first stage of *mesquite* bean before blossoming
va'u'k, stalks, vines, chaff
vacai, grass, hay
vahpk, reeds, cane, cactus-ribs
viho'k, *mesquite* beans
viw, tobacco
vi·bam, milkweed (chewing gum)
bahidak, *sahuaro* fruit
bavi, white bean
*pawui, species of wild bean
pilihkani, pirkanyim, wheat
*pu·li, clover
tai'kah, sprouts of *sas* plant for basketry
tahpk, seeds of a small plant
tahtk, roots
tahkewei, tree *yucca*

10: Dolores I-5 (1911-1919) 1923
NU28 Papago NU28

192 tohawes, species of brush
*tua, whole oak
● 824 *djiawul*, devil cactus, *bisnaga*
toeolim, ṇiorim, species of cactus, *choya*
toe·mi, species of cactus
tcuni, dried cactus fruit
tcuhtcuis, *pitahaya*
kaitc, seeds
kalivac, species of pea (*garbanzos?*)
*ka'kahtɛ, cut and burn brush to clear land
kehpi, watermelon
kisohki, species of cactus
koawul, berry brush
kohte'ṭohpi, *tolocache*
*kokemahṭk, *palo serde*
ku'a'ki, wood
kuhi, kui, *mesquite*
ku'kia, kaite'kah, seed corn

NATURAL PHENOMENA

192 ahki, river bed; *arroyo*
e'eha, anything planted
oyit, oit, farm
o'ohṭ, sand
on, salt
o·la, gold, *oro*
uca'pi, pitch
mai, food cooked in ground
maca't, moon, month
mahtai, ashes
lanicu, *rancho*
*sehpi-djehṭɛ-kam, winter
seva'ahaike, dew
siwuli'k, whirlwind
*cacka'tci, morning mirage
ca·gi'k, cañon, gulch
cu·da'ki, water
heweli, wind
heht, red paint
hi'kuc'pi, mist
ho'dai, stone, rock
hu'u, star
huteni'ke, evening, sunset
vainomi, iron, metal
va'i'ki, water in a jar
va·muli, marsh
vahya, well
vaw, solid rock
*vahkola, water-gathered rubbish
va'ṭa'k, juice
*vahtciki, artificial pond
va'k, hole
*vi·o'ohya'k, fine sand

13:Davis E-5 (1920) 1920 NU28 Papago NU28

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feet to the west, accompanied by assistants robed in blankets, cut poncho-style, with bare arms and legs painted white. There were three assistants to each group, and as they advanced they sprinkled libations of cornmeal from small clam-shells that each held in the left hand. The masked men carried wands, about four feet long, decorated with bunches of eagle-plumes fastened to each end and in the middle. Each plume was fastened with sinew to a deerskin thong, and these were tied in bunches. The assistants wore gray blankets and turbans made of red bandanas, and carried shells of cornmeal. The meal which figures in the ceremony is made only from corn that grows in double or twin ears. In the turbans were inserted four eagle-feathers attached to short sticks. Above the feet of each man were fastened deerskin anklets, circled with small rattles of tough cocoons filled with fine sand. As they neared the singers' booths they crossed on each side, then turned and came back to the booth from which they had started, and took off their ceremonial robes. In the singers'

[293]

[824]

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17: Castetter and Underhill
824

Papago NU28

[For a description of the use of plants by the Papago, see category 116, pp. 13-39, 45-78. Analyst]

17:Castetter & Underhill N.E-5 (1931-1934) 1935
NU28 Papago NU28

At the Well every family had a house or some sort of shelter, and there they kept a duplicate set of heavy household utensils such as jars and grinding stones.

When they settled for the winter the men hunted deer in the nearby mountains and the women made pottery and baskets, although many families wandered about hunting and trading and did not settle. The Altar valley in Sonora was productive all the year and families from the north traveled down there to work for their richer kinsmen. There was, in fact, a constant going to and fro over all Papagueria.

In June the white flowers began to appear on the giant cactus *(Carnegia gigantea)* and then every family returned to pick the fruit and to carry it down to the summer villages for their great yearly ceremony which would bring the rain. The rains came in July, then the fields were planted and the new year had begun.

In recent days these migrations have been extended rather than otherwise. The Papagos now plant winter wheat, as they were taught by the Spaniards, and must come home in May to harvest it. Often they go to the Gila and harvest the Pima crop, working on shares, and in July they go again to the Gila to pick the Pimas' cotton. Thus there are only a few months in the year when the people can be found at either the Fields or the Wells.

Houses at all the villages are now made of adobe. In the old days they were low, brush covered structures, of what has been called "wash basin shape," and the ceremonial houses are still made on that ancient pattern. There were no windows and no smoke hole. The door was a low arch, just high enough for a man to crawl through, and the only furniture was a number of mats made of sotol strips *(Dasylirion wheeleri)* laid around the edge of the one room, and which served both to sit and to sleep on. Valuable property, such as the man's bow and arrows and the woman's basketry materials, were thrust into thatch or hung from the rafters.

UNCULTIVATED PLANTS USED AS SOURCES OF FOODS, BEVERAGES, SMOKING, AND CHEWING MATERIALS

1. Foods

The Papagos, like other peoples in the area, exploited 222
the vegetable resources of the desert to the utmost, and the same plant at different seasons would provide not only roots, greens or fruits for food, but twigs for basketry, wood for implements or sap for dye.

In years when the rainy season was late they lived entirely on wild foods without planting at all. When the foods ripened, during or after the rainy season, enough was gathered and stored to last throughout the year, but just before the giant cactus harvest, food became very scarce, [805]
as is indicated by one of their names for May, *ko'ohk macat*, "the painful moon."

Some foods like the hackberry were simply used by 252
the people in the neighborhood, while others like agave 222
and acorns were gathered by special parties and either 438
utilized or traded. There was one island of unusual flora on Elder Brother's mountain, Baboquivari. Here, near a permanent stream, grew the special luxuries he had provided for his people, and parties went to pick them for trade or on behalf of a village. Certain staples, however, grew in great quantity and these were gathered by everybody.

Different parts of the territory used different magical 241
practices to insure a good crop, the most common being to 222
make effigies of the desired fruits and plant them in the 789
gathering grounds after a night of ritual singing. Sometimes merely an ironwood stake *(Olneya tesota)* was planted [824]
instead of the effigy.

When a crop was reported ripe the village organized 222
its food gathering expedition. If the expedition were for

HUNTING AND UTILIZATION OF WILD ANIMALS AS FOOD

LARGE GAME

Mule or black-tailed deer, *huavi* ---------- *(Odocoileus hemionus)*
Arizona white-tailed deer, *siiki* ---------- *(Odocoileus couesi)*
Antelope, *kuvi't* ---------- *(Antilocapra americana)*
Mountain sheep, *tcicinyi* ---------- *(Ovis mexicanus)*
Peccary ---------- *(Pecari angulatus)*

The mule or black-tailed deer is the game animal around which Papago ceremonies center; it was abundant over the whole country before grazing became extensive, and is still to be found on Mt. Baboquivari and in the uplands just across the border.

Deer hunting was a profession engaged in by only a few. These men bore the title of Headbearer and spent their winters in laying up a supply of skins, sinew and fat, which they traded at times as far as the Gila and Altar valleys. They were also often skilled workers in hides. Deer hunters usually wore a deer head disguise, although a few depended entirely upon clever stalking.

The disguise was made by cutting off a deer head at the neck and removing the skin from the skull with a flint knife, reaching up through the neck and through the mouth, widened for the purpose. The skull was finally pulled out through the mouth which was then sewed up to proper size. Grass was stuffed into the skin to keep the shape while being sun-dried. Next the antlers were shortened from the base and fastened into the head, and the eye openings were either sewed up or fitted with pebbles. After this a loop of flexible catclaw *(Acacia greggii)* was fitted around the hunter's forehead and the skin of the deer neck sewed to this, so it would dry the right size to fit the hunter's head. Thus prepared, the stuffed head was dried in the sun until the skin was hard and stiff.

17:Castetter & Underhill N,E-5 (1931-1934) 1935
NU28 Papago NU28

Gambel quail was the most important food bird. It was trapped in a very rough cage of split giant cactus ribs *(Carnegia gigantea)*. Mourning doves might also be caught in it though these were usually shot with arrows when they were roosting at dusk; they are still hunted and used as food. No bird eggs were ever used.

REPTILES AND WORMS

The desert tortoise *(Gopherus agassizii)*, known as *komaktci't*, was not hunted but people seeing one would take it home and cook it for food.

The worms used were, when young, about an inch long and yellow, but they matured in a few days and turned green. They appeared in quantities just after or during the rainy season on any green growth, especially the amaranth *(Amaranthus palmeri)*. Everyone dropped work to gather them, for they were considered a great delicacy.

DOMESTICATED ANIMALS

The Papago pets in the old days were dogs *(Canis familiaris)* and a few species of birds. Dogs were used to guard the houses, rarely for hunting. The breed was a small white one, in build like a coyote *(Canis lestes)* but with softer fur and only half the size. Coyotes were kept as pets if captured young.

Arrow feathers were obtained from a species of hawk *(Accipiter* sp.), and these were housed in wicker cages and fed with rats and lizards. The tail feathers were pulled whenever they grew long enough. Spanish accounts speak of a number of macaws *(Ara* sp.) being kept for their feathers at San Xavier (27), but this being before Papago occupancy there is no tradition of it.

Father Kino (3) at the beginning of the eighteenth century distributed droves of horses *(Equus caballus)*, cattle *(Bos taurus)*, sheep *(Ovis aries)*, and goats *(Capra hircus)* to all his missions and to many villages where he hoped to establish missions later.

the buckskin lacing. Another type of sandal is described as made of two thicknesses of deerskin dyed red and bound together at the edge with white deerskin. The "rich" had buckskin moccasins to the knee.

Pouches were made for carrying tobacco, paints and fetishes, the simplest being a round piece of dressed buckskin fringed all around the edge and tied up with a thong. All those made at present are of dyed buckskin (colored red with dye from the root of *Krameria glandulosa)* made of two semi-circular pieces sewed together, with fringe around the seam and a flap fastened by a knot of thong serving as a button. Others were made of rabbit skin *(Lepus* sp.) or sometimes fox *(Vulpes fulvus)* with the fur left on.

No headdress was ordinarily worn, although warriors had various caps and ornaments. The *siwoṭ* was a single upright plume, stuck in a headband which might be woven or be merely a deerskin thong. The *pitcpoṭ* was a row of feathers around the head like a crown thrust under a buckskin band. A more elaborate bonnet was the *acki wonam* —a buckskin cap with upright feathers sewed closely all over it with an especially high tuft on the top. There is also mention of a cap of peccary skin *(Pecari angulatus)* fitting closely to the head with upright eagle *(Aquila chrysaetos)* or hawk feathers (because they are the best fighters) sewed around its edge and a mask of buckskin hanging over the face and tied around the neck. Warriors might also tie a bunch of eagledown to the hair at the top of the head, or some long feathers to the hair at the back.

Men wishing to keep their hair out of their eyes tied it with a deerskin thong, or for gala occasions with a woven headband of red and white cotton. For war they tied it at the back of the neck with a deerskin thong, then twisted the mass into a short club wound about with deerskin, and this was specifically called the war knot. Women always wore their hair loose except for a thong or a twist of grass tied around the forehead while working. In racing they brought the whole mass of hair up over the forehead and back again,

17:Castetter & Underhill N.E-5 (1931-1934) 1935
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binding it with a strip of soapweed *(Yucca glauca)*. The hair was brushed with the combination brush and comb made of a bundle of aloe fibers *(Agave americana)*.

The Papago myths tell of Elder Brother wearing bright feathers, probably macaw (*Ara* sp.), and a Spanish account records:

> At San Xavier del Bac and neighboring rancherias there are many macaws which the Pimas raise because of the beautiful feathers of red and other colors, almost like those of the peacock, which they strip from these birds in the spring for their adornment (27, p. 129).

Both sexes wore necklaces and earrings and hunters particularly made handsome necklaces of deer teeth. Women were tattooed with vertical lines on the chin, a woman specialist doing the work for which she was paid a necklace or a basket of corn. Her piercing instrument was four sahuaro needles *(Carnegia gigantea)* tied in a row with a shred of yucca fiber *(Yucca glauca)*. She pinched up the skin between her forefinger and thumb and pierced it, and many patients had crooked lines because they winced. Into the holes she rubbed charcoal from a fire of creosote bush *(Covillea glutinosa)* which leaves a permanent greenish blue color. The ears of both sexes were pierced early in childhood with an ocotillo thorn *(Fouquieria splendens)*.

Paints were made from clay, charcoal, specular iron, and vegetable dyes, and since the upper part of the body was habitually naked it provided plenty of field for design. Vegetable dyes were rather rarely used and then only by women. Red dye was obtained from the root of *Krameria glandulosa* while the pollen of a reed (probably *Arundo donax)* provided a yellow dye. In daily life older men and women did not paint, but smeared deer grease over the body when necessary for warmth, as did hunters and warriors before going on an expedition.

The root of the soapweed *(Yucca glauca)* was dried, pulverized, and mixed with water to form suds for washing the hair.

aridity, and the replacement of grass by mesquite, shrubs, and cactus, the distribution and abundance of grass is closely controlled by precipitation, with most of the growth taking place each year in August. In general, the best grassland is at the higher elevations of the reservation (excepting the rougher summits of the mountains and ridges), that is, on the slopes of the Baboquivari Mountains and in other scattered locations where precipitation is favorable. In this connection it is of interest that Richard J. Hinton described the country for 38 miles west of the Baboquivari Mountains as "fine grazing land" in 1878 (The Handbook to Arizona), whereas the grass got progressively poorer as he travelled further west.

A large number of the common desert plants were traditionally used by the Papago, particularly as food, and also as the materials of which houses, baskets, and numerous tools and utensils were constructed. Particularly important were the fruits of the saguaro and mesquite and seeds of sacaton grass, and pigweed or amaranth. From spring through late summer, many plants were valued as greens, contributing importantly to the diet: lambsquarter, canaigre, the buds of the cholla, the mescal or century plant, sotol, and others.